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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,514	02/17/2004	Cherng-Chyi Han	HT03-019	1377
7590	08/23/2006			EXAMINER
STEPHEN B. ACKERMAN				KLIMOWICZ, WILLIAM JOSEPH
28 DAVIS AVENUE				
POUGHKEEPSIE, NY 12603			ART UNIT	PAPER NUMBER

2627

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/780,514	HAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	William J. Klimowicz	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 29 June 2006.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-34 is/are pending in the application.  
4a) Of the above claim(s) 18-34 is/are withdrawn from consideration.  
5)  Claim(s) 1-17 is/are allowed.  
6)  Claim(s) \_\_\_\_\_ is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 17 February 2004 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_.

***Ex Parte Quayle***

***Election/Restrictions***

Applicants' election with traverse of Group II (process claims 1-17) in the reply filed on June 29, 2006 is acknowledged. The Examiner also required that the Applicants choose among Species I, characterized as encompassing Figures 1-8, and Specie II encompassing Figures 9-15. The Applicants' traversal regarding the *Species* requirement is deemed moot. After considering the Applicants' disclosure and drawings in full detail, the Examiner maintains that previously designated Species are patentably indistinct, and therefore, the restriction requirement as it pertains to the Species has been vacated.

As it pertains to the restriction requirement regarding the Groupings I and II (product and process claim groupings), the Applicants' traversal is on the ground(s) that:

"The Examiner gives the reasons for the distinctness between inventions I and II as (1) that the process as claimed can be used to make other and materially different product, or (2) the product as claimed can be made by another and materially different process (M.P.E.P. 806.0549). However, upon reading the process Claims against the product Claims one can readily see that the process Claims are directed to a method of forming "a method to form a magnetic write head", and that the product claims are directed to "a magnetic write head", and that it is necessary to obtain claims in both the process and product claim language. The process claims necessarily use the product and vice versa. The field of search must necessarily cover both the process class/subclass 29/603.14 and product class/subclass 360/126, in addition to other related classes and subclasses, to provide a complete and adequate search. The fields of search for Groups I and II are clearly and necessarily co-extensive. The Examiner's suggestion that "in the instant case the product could be made by a process not requiring the fabrication steps as articulated in the method claims, including use of, *inter alia*, a chemical etch, etc." is speculative and has nothing to do with the Claims as presented in this patent application.

"Further, it is respectfully suggested that these reasons are insufficient to place the cost of additional patent applications upon the applicants. Therefore, it is

respectfully requested that the Examiner withdraw this restriction requirement for these reasons."

See pages 2-3 of Applicants' response filed on June 29, 2006.

This is not found persuasive because the Examiner maintains that the process claims require that a method whereby to form a magnetic write head, the process expressly includes forming a photoresist mold whose floor is a top surface of the seed layer and the nonmagnetic metal layer, and then electroplating, a write gap layer on the floor, whereby the write gap layer overlaps both the seed layer and the layer of the non-magnetic metal; then forming, through electroplating onto the write gap layer, an upper pole piece and then removing all photoresist.

Such a requisite limitation is not required by the product claims of Group I.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-17 have been examined as to their merits.

This application contains claims 18-34 drawn to an invention nonelected with traverse in the Reply filed on June 29, 2006. A complete reply to this action must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

#### ***Outstanding Formal Matters***

This application is in condition for allowance except for the following formal matters:

***Drawings***

The drawings are objected to because Figures 1-6 all depict the “lower write shield 11” as being deposited directly over “insulating layer 12.” Figures 7 and 8, however, are inconsistent with the previous drawing figures, since they omit the lower write shield 11.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

The disclosure is objected to because of the following informalities:

With regard to page 3 (line 6), page 4 (line 8) and page 8 (line 2), the designation of “23 KG” appears to conflict with the claimed “seed layer having a magnetic moment of at least 24 kilogauss” as set forth in claim 1 (line 6) and claim 9 (line 18) as well as page 5 (line 5-6) of the Applicants’ disclosure.

Additionally, with regard to page 6 (line 2), the recitation of “[u]pper pole piece 52 is made of a material such as CiBiFe” appears to conflict with the composition of the upper pole piece as set forth in claim 7 and claim 16, which recites the upper pole piece being of a CoNiFe composition.

With regard to page 7 (line 2), the word “sen” should be changed to the word --seen--.

Appropriate correction is required.

### ***Claim Objections***

Claims 1, 4, 8, 9 and 17 are objected to because of the following informalities:

With regard to claim 1 (line 10) and claim 9 (line 22), the phrase “forming, a photoresist mold whose floor is *said top surface*” (emphasis added) is inconsistent with the specification as disclosed by the Applicants. More concretely, the photoresist mold as formed, is deposited on the seed layer and non-magnetic metal layer. Thus, the *floor* of the *photoresist mold is the seed layer and the non-magnetic layer*, and *not* the *top surface of the insulation*, as prescribed currently in claim 1 and claim 9.

With regard to claim 4 (line 1), the word “material” should be changed to the word --metal-- in order to remain consistent with preceding claim language.

With regard to claim 8 (line 1) and claim 17 (line 1), the word --piece-- should be inserted after the changed to the word --metal-- in order to remain consistent with preceding claim language.

Appropriate correction is required.

***Reasons for Allowance***

The following is an Examiner's statement of reasons for allowance:

The prior art of record fails to fairly, teach, show or suggest, by either anticipating or rendering obvious, the invention as set forth in the claims of the instant application.

Furthermore, a search made does not detect the combined claimed elements as set forth in the pending claims. Additionally, the reasons for allowance of the claims over the prior art of record is believed to be readily clear, self evident and apparent from the claim language set forth in each of claims 1 and 9, when compared and contrasted with the prior art.

More particularly, the instant invention (as set forth in independent claims 1 and 9) provides for a method to form a magnetic write head for high track density applications. The process includes providing a lower pole piece that further includes a write-coil in a coil well. The coil well is filled with insulation and having a top surface. Deposited on the top surface is a seed layer having a magnetic moment of at least 24 kilogauss. In the seed layer, a trench is formed that extends down as far as the top surface and that has sloping sidewalls. The trench is filled with a layer of a non-magnetic metal. A photoresist mold is formed whose floor is a top surface of the seed layer and/or metal layer, upon which a write gap layer is electroplated on the floor whereby said write gap layer overlaps both the seed layer and the layer of a non-magnetic

metal. Electroplated onto the write gap layer, is an upper pole piece. The photoresist is then removed and a back gap piece is formed that is in magnetic contact with the seed layer and with the upper pole piece and which does not overlap the write gap layer.

None of the cited prior art of record, however, teach, show or suggest, a method for forming a magnetic write head for high track density applications, including wherein, *inter alia*, depositing on a top surface of a coil insulation layer, a seed layer having a magnetic moment of at least 24 kilogauss, whereby, in the seed layer, a trench is formed that extends down as far as the top surface and that has sloping sidewall, whereby the trench is filled with a layer of a non-magnetic metal, whereby a photoresist mold is formed whose floor is a top surface of the seed layer and/or metal layer, upon which a write gap layer is electroplated on the floor whereby the write gap layer overlaps both the seed layer and the layer of a non-magnetic metal, whereby electroplated onto the write gap layer, is an upper pole piece, whereby, the photoresist is then removed and a back gap piece is formed that is in magnetic contact with the seed layer and with the upper pole piece and which does not overlap the write gap layer.

The prior art of record does not disclose the invention as set forth in the manner, function and relationship relative to other claimed structure as prescribed by the independent claims 1 and 9.

Additionally, the prior art of record does not provide, alone or in combination with the art of record or general knowledge within the art, any suggestion or teaching for the invention as set forth in the independent claims 1 and 9.

***Conclusion***

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Will*  
William J. Klimowicz  
Primary Examiner  
Art Unit 2627

WJK